

MELANIE A. RHODES, M.S.

Research Associate IV, Auburn University
School of Fisheries, Aquaculture and Aquatic Sciences
Claude Peteet Mariculture Center
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EDUCATION

Master of Science: Fisheries and Allied Aquacultures, Auburn University, AL. August 2005.

Rhodes, M.A. 2005. Evaluation of *Fabrea salina* and other ciliates as alternative live foods for first-feeding red snapper *Lutjanus campechanus*, larvae. M.S. Thesis.

Bachelor of Science: Marine Science-Biology, May 2001.

Long Island University-Southampton College, Southampton, NY

RELEVANT WORK EXPERIENCE

Research Associate IV

Auburn University, Claude Peteet Mariculture Center, Gulf Shores, AL
October 2016-present

- Supervise graduate students research projects and provide guidance as needed
- Assist in the design and execution of research related to aquatic animal production and nutrition
- Maintain the facilities including ponds, laboratory, and recirculating systems

Research Associate III

Auburn University, Claude Peteet Mariculture Center, Gulf Shores, AL
November 2008-November 2016

- Supervise graduate students research projects and provide guidance as needed
- Assist in the design and execution of research related to aquatic animal production and nutrition
- Maintain the facilities including ponds, laboratory, and recirculating systems

Research Technician

Auburn University, Claude Peteet Mariculture Center, Gulf Shores, AL
April 2008-November 2008

- Care for several species of fish in ponds and recirculating systems
- Organize the collection of bait fish to be used in sales and marketing research
- Assist with graduate student's research involving shrimp production

Staff Biologist

Mote Marine Laboratory, Mote Aquaculture Park, Sarasota, FL
April 2007-February 2008

- Established algae and copepod cultures for live feeds in larval fish experiments
- Designed and conducted experiments for fish production in recirculating aquaculture systems
- Collected and reported data on various hatchery projects while instructing a student intern

Professional Research Assistant

Florida State University, Coastal and Marine Laboratory, St. Teresa, FL

May 2006-April 2007

- Cultured algae and copepods for supplying cold-stored copepod eggs to Mote Marine Laboratory
- Helped set up and conduct experiments for a graduate student's biochemical copepod research
- Maintained laboratory records, databases, progress reports and inventory

Graduate Research Assistant

Auburn University, Claude Peteet Mariculture Center, Gulf Shores, AL

July 2003-July 2005

- Maintained algae, protozoan, red snapper, and cobia cultures to research
- Conducted trials to determine optimal growth conditions to mass culture ciliates
- Helped instruct undergraduate interns basic laboratory skills and aquaculture practices

Educator/Deckhand

Bayshore Discovery Project, Schooner AJ Meerwald, Bivalve, NJ

March 2003-June 2003

- Instructed passengers on marine science, sailing and the oyster industry
- Performed sail handling and maintenance of an oyster dredging schooner
- Lead school assembly programs on estuaries and guided salt marsh discovery tours

Aquatic Biologist

Wildlife International Ltd., Easton, MD

January 2002-March 2003

- Maintained sterile cultures of several species of aquatic plants and algae
- Monitored a large variety of water quality laboratory instruments and apparatuses
- Collected, processed, and reported biological and environmental toxicology data

Hatchery Technician

East Hampton Town Shellfish Hatchery, East Hampton, NY

March 2001- September 2001

- Performed daily tasks with recirculating hatchery systems and flow through grow out sites
- Cared for oysters, clams, and scallops through all stages of their life history
- Shellfish were seeded in local harbors for stock enhancement

Research Intern

Chesapeake Biological Laboratory, Solomons, MD

July 2000-September 2000, January 2000 and July 1999-September 1999

- Regular feeding and maintenance of fish, amphipod and plankton tanks
- Counted and identified microzooplankton to determine distribution and abundance
- Helped graduate students research including ecotoxicology studies, zooplankton enumeration and larval fish feeding experiments

Cooperative Education Student

Wisconsin Aquatic Technology and Research Institute, Milwaukee, WI
May 1999-July 1999

- Learned zooplankton collection, sorting and identification techniques
- Assisted with the gill-netting of yellow perch to use as broodstock and spawn in laboratory
- Conducted predator-prey laboratory experiments with lab reared yellow perch larvae

GRADUATE STUDENTS MENTORED

Ph.D. STUDENTS

- Reis, João Doctor of Philosophy, Auburn University, School of Fisheries, Aquaculture and Aquatic Sciences. The Application of Automatic Systems in Shrimp Production as Tools to Improve Feed Management. May 1, 2021.
- Guo, Jingping Doctor of Philosophy, Auburn University, School of Fisheries, Aquaculture and Aquatic Sciences. Practical diets for Pacific white shrimp *Litopenaeus vannamei* utilizing alternative ingredients. December 14, 2019.
- Novriadi, Romi Doctor of Philosophy, Auburn University, School of Fisheries, Aquaculture and Aquatic Sciences. Evaluation of advanced soy products in diets fed to Florida pompano *Trachinotus carolinus*. December 15, 2018.
- Zhou, Yangen Doctor of Philosophy, Auburn University, School of Fisheries, Aquaculture and Aquatic Sciences. Optimization of Plant Based Diets for Pacific White Shrimp (*Litopenaeus vannamei*). August 2, 2014.
- Soller Dias Silva, Fabio Doctor of Philosophy, Auburn University, Department of Fisheries and Allied Aquacultures. Development and Application of Non Marine Ingredients Based Diets for Pacific White Shrimp, *Litopenaeus vannamei*: Examining the Suitability of Alternative Lipid Sources. May 05, 2012.
- Sookying, Daranee Ph.D. Doctor of Philosophy, Auburn University, Department of Fisheries and Allied Aquacultures. Development and Application of Soybean Based Diets for Pacific White Shrimp *Litopenaeus vannamei*. December 13, 2010.

M.S. STUDENTS

- Araujo Galindo, Adela Nicole. Master of Science, Auburn University, School of Fisheries, Aquaculture and Aquatic Sciences. Effects of minimum dissolved oxygen setpoints for aeration in semi-intensive pond production of Pacific White shrimp (*Litopenaeus vannamei*). May 3, 2024.
- Corby, Trenton. Master of Science, Auburn University, School of Fisheries, Aquaculture and Aquatic Sciences. Comparison and Efficacy of Soy-based Ingredients in Practical Diets for Florida Pompano (*Trachinotus carolinus*). May 3, 2024.
- Strebel, Leila. Master of Science, Auburn University. School of Fisheries, Aquaculture and Aquatic Sciences. On demand feeding and the response of Pacific white shrimp (*Litopenaeus vannamei*) to varying dietary protein levels in semi-intensive pond production. December 10, 2022.
- Walsh, Samuel. Master of Science, Auburn University. School of Fisheries, Aquaculture and Aquatic Sciences. Utilizing Feed Effectors and Passive Acoustic Monitoring for Semi-Intensive Pacific White Shrimp (*Litopenaeus vannamei*) Production. May 7, 2022.

- Weldon, Alexis. Master of Science, Auburn University. School of Fisheries, Aquaculture and Aquatic Sciences. Use of metabolically modified canola oil as a replacement for fish oil in practical diets of pacific white shrimp *Litopenaeus vannamei*. May 1, 2021
- Stites, William Cody. Master of Science, Auburn University. School of Fisheries, Aquaculture and Aquatic Sciences. Improving plant-based diets for Florida pompano, *Trachinotus carolinus*. May 1, 2021.
- Swanepoel, Anneleen. Masters of Science, Auburn University. School of Fisheries, Aquaculture and Aquatic Science. Efficacy of Purified Amino Acids in Practical Diets for Pacific White Shrimp *Litopenaeus vannamei*. August 4, 2018.
- Derbes, Thomas. J. II. Masters of Science, Auburn University. School of Fisheries, Aquaculture and Aquatic Sciences. Supplementing Broodstock and Larval Diets for Florida Pompano *Trachinotus carolinus* with Taurine to Improve Egg, Larval, and Weaned Juvenile Quality. December 16, 2017.
- Ullman, Carter Ellis. Masters of Science, Auburn University. School of Fisheries, Aquaculture and Aquatic Sciences. An Evaluation of Feed Management, the Use of Automatic Feeders, and Feed Leaching in the Culture of Pacific White Shrimp *Litopenaeus vannamei*. December 16, 2017.
- Roe, Charles. Masters of Science, Auburn University. School of Fisheries, Aquaculture and Aquatic Sciences. Improving High Soy Feed Formulations for Florida Pompano *Trachinotus carolinus* through Phytase Supplementation. August 6, 2016.
- Van, Pham Thi Ha. Masters of Science, Auburn University. School of Fisheries, Aquaculture and Aquatic Sciences. Optimization of feed management for Pacific White Shrimp (*Litopenaeus vannamei*) May 08, 2016.
- Cook, Rebecca. Masters of Science, Auburn University. School of Fisheries, Aquaculture and Aquatic Sciences. Analysis of Florida Pompano *Trachinotus carolinus* performance when fed practical diets of variously processed cottonseed products. May 3, 2014.
- Achupallas, Julio M. Masters of Science, Auburn University. Department of Fisheries and Allied Aquacultures. Development and Application of Grain Distillers Dried Yeast for Pacific White Shrimp *Litopenaeus vannamei*. May 4, 2013.
- Rossi, Jr., Waldemar. Masters of Science, Auburn University, Department of Fisheries and Allied Aquacultures. Development of Alternative-Protein-Based Diets for the Intensive Production of Florida Pompano *Trachinotus carolinus* L. May 9, 2011.

VISTING AND EXCHANGE STUDENTS

- Arnold Gutierrez, Visiting Student, Zamorano University, Honduras. Fall 2023.
- Paulo Alto, Visiting Student, University of Universidade Estadual Paulista, Brazil. June to October 2019.
- Joao Reis, Visiting Scholar, MS exchange student. University of Porto, Porto Portugal. April 1 to October 31, 2017.
- Laisa Alves Soares, Undergraduate Exchange Student, Brazil. May 1 to July 31, 2015.
- Shelby Oliver, Undergraduate Aquaculture Volunteer May 1 to August 15, 2015.
- Guilherme Sassi, Undergraduate Exchange Student, Brazil. July 1 to November 15, 2013.
- Katia Rodrigues Batista de Oliverira. Undergraduate Student, Supported by Science without Frontiers. September 2012 to August 2013.

MANUSCRIPTS IN REVIEW

Araujo, A. N., K. Q. Nguyen; L. Strebel; T. Corby; L. A. Roy; B. H. Beck and D. A. Davis (Aquaculture Nutrition). The effect of protein intake on growth and nutrient retention of Pacific White shrimp (*Litopenaeus vannamei*) in a green water recirculating aquaculture system.

PUBLICATIONS

- Araujo, A. N., C. G. San-Andres, K. Q. Nguyen, T. Corby M. Rhodes, J., Garcia, L. A. Roy and D. A. Davis, 2025. Effects of minimum dissolved oxygen setpoints for aeration in semi-intensive pond production of Pacific white shrimp (*Litopenaeus vannamei*). Aquaculture. 594: 741376. <https://doi.org/10.1016/j.aquaculture.2024.741376>
- Weldon, A., M. Rhodes, A. Morey, D. Iassonova, L. Roy, and D. Allen Davis, 2024. Use of Genetically Modified Canola Oil as a Replacement for Fish Oil in Practical Diets of Whiteleg Shrimp *Litopenaeus vannamei* Reared in Clear Water Conditions. Global Journal of Nutrition and Food Science. 5 (3). <http://dx.doi.org/10.33552/GJNFS.2024.05.00061>
- Stites, W., A. Weldon, J. Reis, P. Ito, M. Rhodes, and D. Allen Davis, 2024. Evaluation of a carbohydrase (xylanase and glucanase) enzyme complex in diets for Florida pompano *Trachinotus carolinus*. Journal of World Aquaculture Society, e13095. <https://doi.org/10.1111/jwas.13095>
- Amorocho, A. K., M. A. Rhodes, A.S. Miranda, E. R. Montecino and D. A. Davis. 2024 Growth performance and digestibility using proteases and carbohydrases in diets for Nile tilapia *Oreochromis niloticus*. HSOA Journal of Aquaculture & Fisheries. 8:092. DOI: 10.24966/AAF-5523/100092
- Weldon, A., D. Allen Davis, M. Rhodes, A. Morey, D. Iassonova, L. Roy. 2023. Use of Genetically Modified Canola Oil as a Replacement for Fish Oil in Practical Diets for Whiteleg Shrimp *Litopenaeus vannamei* Reared in Green Water Conditions. Aquaculture Research. <https://doi.org/10.1155/2023/2999827>
- Strebel, L., K. Nguyen, A. Araujo, T. Corby, M. Rhodes, B. H. Beck, L. A. Roy and D. A. Davis. 2023. On demand feeding and the response of Pacific white shrimp (*Litopenaeus vannamei*) to varying dietary protein levels in semi-intensive pond production. <https://doi.org/10.1016/j.aquaculture.2023.739698>
- Reis, J., A.S. Hussain, A. Weldon, S. Walsh, W. Stites, M. Rhodes and D. A. Davis. 2023. Passive acoustic feeders as a tool to assess feed response and growth in shrimp pond production. Aquaculture International. DOI:10.1007/s10499-023-01053-3
- Walsh, S., Nguyen, K., Strebel, L., Rhodes, M. & Davis, A. 2022. Utilizing feed effectors and automated feeders for Semi-intensive pacific white shrimp (*Litopenaeus vannamei*) production. Aquaculture, Fish and Fisheries, 2:540–551. <https://doi.org/10.1002/aff2.83>
- Zhang, D., H. Mohammed, Z. Ye, M. A. Rhodes, W. Thongda, H. Zhao, L. N. Jescovitch, S. A. Fuller, D. Allen Davis, and E. Peatman. 2022. Transcriptomic profiles of Florida pompano (*Trachinotus carolinus*) gill following infection by the ectoparasite *Amyloodinium ocellatum*. Fish and Shellfish Immunology. 125:171-179. <https://doi.org/10.1016/j.fsi.2022.05.017>
- Stites, W., A. Weldon, J. Reis, S. Walsh, R. Davis, M. Rhodes, D. A. Davis, 2022. Quantitative lysine requirement for juvenile Florida pompano, *Trachinotus carolinus* fed plant-based diets, Aquaculture, 547, <https://doi.org/10.1016/j.aquaculture.2021.737548>

- Reis, J., S. Peixoto, R. Soares, M. Rhodes, C. Ching, D. A. Davis, 2022. Passive acoustic monitoring as a tool to assess feed response and growth of shrimp in ponds and research systems, *Aquaculture*, 546, <https://doi.org/10.1016/j.aquaculture.2021.737326>
- Reis, J., A. Weldon, P. Ito, W. Stites, M. Rhodes, D. A. Davis, 2021. Automated feeding systems for shrimp: Effects of feeding schedules and passive feedback feeding systems, *Aquaculture*, 541, <https://doi.org/10.1016/j.aquaculture.2021.736800>
- Walsh, S., R. Davis, A. Weldon, J. Reis, W. Stites, M. Rhodes, L. Ibarra-Castro, T. Bruce, D. A. Davis, 2021. Effects of fishmeal replacement, attractants, and taurine removal on juvenile and sub-adult Red Snapper (*Lutjanus campechanus*), *Aquaculture*, 544, <https://doi.org/10.1016/j.aquaculture.2021.737054>
- Weldon, A., D. A. Davis, M. Rhodes, J. Reis, W. Stites, P. Ito, 2021. Feed management of *Litopenaeus vannamei* in a high density biofloc system, *Aquaculture*, 544, <https://doi.org/10.1016/j.aquaculture.2021.737074>
- Novriadi R., Rhodes, M., Reis, J., Guo, J., Swanepoel, A., Davis, D.A., 2020. Growth, body composition, and distal intestine histology of Florida pompano *Trachinotus carolinus* in response to dietary inclusion of hydrolyzed salmon meal and pH adjustment, *Journal of Applied Aquaculture*, 1-16. <https://doi.org/10.1080/10454438.2020.1757010>
- Guo, J., Swanepoel, A., Qiu, X., Reis, J., Rhodes, M., Davis, D.A. 2020. Use of salmon by-product meals as a replacement for anchovy meal in practical diets for the Pacific white shrimp (*Litopenaeus vannamei*). *Aquaculture Nutrition* 26(2): 490-501. <https://doi.org/10.1111/anu.13011>
- Guo, J., Swanepoel, A., Reis, J., Salze, G., Rhodes, M., Davis, D.A., 2020. Hydrolysed salmon meal as a replacement for salmon meal in practical diets for Pacific white shrimp (*Litopenaeus vannamei*). *Aquaculture Nutrition* 26(2): 368-381. DOI:10.1111/anu.12999
- Reis, J., Swanepoel, A., Novriadi, R., Rhodes, M., Guo, J., Davis, D.A. 2020. Optimizing feed automation: improving timer-feeders and on demand systems in semi-intensive pond culture of shrimp. *Aquaculture* 519. <https://doi.org/10.1016/j.aquaculture.2019.734759>
- Soller, F., Roy, L.A., Davis, D.A., 2019. Replacement of fish oil in plant-based diets for Pacific white shrimp, *Litopenaeus vannamei*, by stearine fish oil and palm oil. *Journal of the World Aquaculture Society* 50 (1), 186-203.
- Guo, J., J. Reis, G. Salze, M. Rhodes, S. Tilton, D. A. Davis. 2019. Using high protein distiller's dried grain product to replace corn protein concentrate and fishmeal in practical diets for the Pacific white shrimp *Litopenaeus vannamei*. *Journal of the World Aquaculture Society*. 50 (5):983-992.
- Novriadi, R., Spangler, E., Allen Davis, D., 2018. Comparative effect of advanced soy products or corn protein concentrate with porcine meal on growth, body composition, and distal intestine histology of Florida pompano, *Trachinotus carolinus*. *Journal of the World Aquaculture Society* 50 (2), 433-447.
- Novriadi, R., Salze, G.P., Abebe, A., Hanson, T.R., Davis, D.A. 2019. Partial or total replacement of fish meal in the diets of Florida pompano *Trachinotus carolinus*. *Aquaculture Research*. DOI: 10.1111/are.14029
- Salze, G.P, Rhodes, M.A, Davis, D.A., 2018. Quantitative taurine requirement for juvenile Florida pompano (*Trachinotus carolinus*) fed soy-based practical diets. *Aquaculture Nutrition* DOI: 10.1111/anu.12864
- Ullman, C., Rhodes, M.A., Davis, D.A., 2019. The effects of feed leaching on the growth of

- Pacific white shrimp *Litopenaeus vannamei* in a green-water tank system. *Aquaculture Research* 50, 3074-3077.
- Ullman, C., Rhodes, M.A., Allen Davis, D., 2019. Feed management and the use of automatic Feeders in the pond production of Pacific white shrimp *Litopenaeus vannamei*. *Aquaculture* 498, 44-49.
- Ullman, C., Rhodes, M., Hanson, T., Cline, D., Davis, D.A., 2019. Effects of Four Different Feeding Techniques on the Pond Culture of Pacific White Shrimp, *Litopenaeus vannamei*. *Journal of the World Aquaculture Society* 50, 54-64. doi:10.1111/jwas.12531
- Roe, C.M., To Pham Thi Ha, V., Zhou, Y., Salze, G.P., Rhodes, M.A., Hanson, T.R., Davis, D.A., 2018. Improving High Soy Feed Formulations for the Florida Pompano *Trachinotus carolinus* through Newer Soy Products and Carbohydrase Supplementation. *Journal of the World Aquaculture Society*, doi:10.1111/jwas.12575
- Jescovitch, L.N., Ullman, C., Rhodes, M., Davis, D.A., 2018. Effects of different feed management treatments on water quality for Pacific white shrimp *Litopenaeus vannamei*. *Aquaculture Research* 49 (1), 526-531.
- Novriadi, R., Rhodes, M., Powell, M., Hanson, T., Davis, D., 2018. Effects of soybean meal replacement with fermented soybean meal on growth, serum biochemistry and morphological condition of liver and distal intestine of Florida pompano *Trachinotus carolinus*. *Aquaculture Nutrition* 24 (3), 1066-1075.
- Zhou, Y., Rhodes, M.A., Liu, J., Davis, D.A., 2017. Effects of various dietary levels of copper hydroxychloride on growth performance and tissue response in Pacific white shrimp *Litopenaeus vannamei* fed practical diets. *Aquaculture Nutrition*. 23, 171-180.
- Jescovitch LN, Ullman C, Rhodes M, Davis DA. 2018. Effects of different feed management treatments on water quality for Pacific white shrimp *Litopenaeus vannamei*. *Aquac Res.*49:526-531.
- Novriadi, R., Spangler, E., Rhodes, M., Hanson, T., Allen Davis, D., 2017. Effects of various levels of squid hydrolysate and squid meal supplementation with enzyme-treated soy on growth performance, body composition, serum biochemistry and histology of Florida pompano *Trachinotus carolinus*. *Aquaculture*. 481, 85-93.
- Zhou, Y. Zhang, D., Peatman, E., Rhodes, MA, Liu, J, Davis, DA. 2017. Effects of various Levels of dietary copper supplementation with copper sulfate and copper hydroxychloride on Pacific white shrimp *Litopenaeus vannamei* performance and microbial communities. *Aquaculture* 476:94-105.
- Van TPTH, Rhodes MA, Zhou Y, Davis DA. 2017 Feed management for Pacific white shrimp *Litopenaeus vannamei* under semi-intensive conditions in tanks and ponds. *Aquac Res.* 48:5346-5355.
- Rhodes, M.A., Y. Zhou, G.P. Salze, D.A. Davis and T. Hanson. 2017. Development of plant-based diets and the evaluation of dietary attractants for juvenile Florida pompano, *Trachinotus carolinus* L. *Aquaculture Nutrition* doi:10.1111/anu.12474
- Soller, F., M.A. Rhodes and D.A. Davis. 2015. Replacement of fish oil with alternative lipid sources in plant-based practical feed formulations for marine shrimp (*Litopenaeus vannamei*) reared in outdoor ponds and tanks. *Aquaculture Nutrition*. doi:10.1111/anu.12360.
- Cook, R.L., Y. Zhou, M.A. Rhodes and D.A. Davis. 2016. Evaluation of various cottonseed products on the growth and digestibility performance in Florida pompano *Trachinotus carolinus*. *Aquaculture* 453:10-18.

- Salze, G.P., E. Spangler, P.A. Cobine, M. Rhodes and D.A. Davis. 2016. Investigation of biomarkers of early taurine deficiency in Florida pompano *Trachinotus carolinus*. *Aquaculture* 451: 254–265.
- Rhodes, M.A., Y. Zhou, D.A. Davis. 2015. Use of dried fermented biomass in Florida pompano, *Trachinotus carolinus* diets. *Journal of Applied Aquaculture* 27:29-39.
- Rhodes, M.A., D. Yu, Y. Zhou, D.A. Davis. 2015. Use of lipid-extracted distillers dried grain with solubles (DDGS) in diets for Pacific white shrimp. *North American Journal of Aquaculture* 77:539-546.
- Zhou, Y., D.A. Davis, M.A. Rhodes. 2014. Comparative evaluation of copper sulfate and tribasic copper chloride on growth performance and tissue response in Pacific white shrimp *Litopenaeus vannamei* fed practical diets. *Aquaculture* 434:411-417.
- Jirsa, D.O., K.R. Stuart, G. P. Salze, M.A. Rhodes, D.A. Davis, M.A. Drawbridge. 2014. Limiting amino acids in practical diets for California yellowtail, *Seriola lalandi*. *Journal of the World Aquaculture Society* 45:681-690.
- Jirsa, D., D. A. Davis, G. P. Salze, M. Rhodes and M. Drawbridge. 2014. Taurine requirement for juvenile white seabass (*Atractoscion nobilis*) fed soy-based diets *Aquaculture* 422–423:36–41.
- Quintero, H.E., D.A. Davis and M.A. Rhodes. 2012. Soy Protein Concentrate as an alternative ingredient in Florida pompano (*Trachinotus carolinus*) diets. *Journal of Applied Aquaculture* 24:247-261.
- Rhodes, M.A. and R.P. Phelps. 2008. Evaluation of the ciliated protozoa, *Fabrea salina* as first food for larval red snapper, *Lutjanus campechanus* in a large scale rearing experiment. *Journal of Applied Aquaculture* 20(2):120-133.
- Rhodes, M.A., C. Sedlacek and N.H. Marcus. 2008. Large-scale batch algae cultivation: comparison of two seawater sterilization techniques. *Aquaculture Research* 39:1128-1130.

ARTICLES

- Davis, D. A., C. San Andres, K. Q. Nguyen, J. L. Gonzalez, A. Gutierrez, M.A. Rhodes, J. García, and L. A. Roy, 2024. The use of corn fermented protein with yeast as a protein source complement soybean meal in practical diets for pond production of Pacific white shrimp (*Litopenaeus vannamei*). *Alabama Fish Farming Center Issue 2*, 12/4/2024 <https://agriculture.auburn.edu/research/faas/alabama-fish-farming-center/affc-newsletters/>
- Stites, W., A. Weldon, J. Reis, S. Walsh, R. Davis, M. Rhodes, and D. A. Davis. 2023 Recent study quantifies the lysine requirement for Florida pompano fed plant-based feeds. *Responsible Seafood Advocate*. <https://www.globalseafood.org/advocate/study-quantifies-the-lysine-requirement-for-florida-pompano-on-plant-based-diets/>
- Davis, D.A., L. Strebel, K. Nguyen, A. Araujo, S. Bajracharya, M. Rhodes. 2022. Shrimp Production Update. *Alabama Fish Farming Center Issue 2*, 11/28/2022 <https://agriculture.auburn.edu/research/faas/alabama-fish-farming-center/affc-newsletters/>
- Walsh, S., K. Nguyen, L. Strebel, M. A. Rhodes and D. A. Davis. 2022. Attractants, acoustics and soy-optimized diets for Pacific white shrimp. *Responsible Seafood Advocate*. <https://www.globalseafood.org/advocate/attractants-acoustics-and-soy-optimized-diets-for-pacific-white-shrimp/>
- Reis, J., Weldon, A., Walsh, S. Stites W., Rhodes, M., Davis, D.A. 2021. Response of Pacific white shrimp to various diets demand-fed with passive acoustic feeders.

- <https://www.globalseafood.org/advocate/response-of-pacific-white-shrimp-to-various-diets-demand-fed-with-passive-acoustic-feeders/>
- Reis, J., Weldon, A., Ito, P., Stites, W., Rhodes, M., Davis, D.A. 2020. Acoustic feedback improves automated feeding systems for shrimp.
<https://www.globalseafood.org/advocate/acoustic-feedback-improves-automated-feeding-systems-for-shrimp/>
- Reis, J., Peixoto, S., Soares, R., Rhodes, M., Davis, D.A. 2020. The use of acoustic feeders in shrimp production reduces feed usage and increases growth. Alabama Fish Farming Center, Fish Farming News, 2:14-15. <https://agriculture.auburn.edu/research/faas/alabama-fish-farming-center/affc-newsletters/>
- Reis, J.T., Swanepoel, A., Novriadi, R., Rhodes, M., Davis, D.A., 2019. Testing soy-optimized feeds and automated feeding systems in shrimp pond production, Global Aquaculture Advocate. <https://www.aquaculturealliance.org/advocate/testing-soy-optimized-feeds-automated-feeding-systems-shrimp-pond-production/>
- Davis, A., Ullman, C., Rhodes, M., Novriadi, R., Swanepoel A., 2018. Automated feeding systems in pond production of Pacific white shrimp.
<https://www.globalseafood.org/advocate/automated-feeding-systems-in-pond-production-of-pacific-white-shrimp/>
- Rhodes M, Ullman C, Novriadi R, Swanepoel A, Davis DA. 2018. Automatic feeding systems used in pond production of Pacific white shrimp *Litopenaeus vannamei*. *Fish Farming News*. 2018(1):5-6.
- Ullman, C., Rhodes, M., Hanson, T.R., Cline, D., Davis, D.A., June 2017. A New Paradigm for Managing Shrimp Feeding, *World Aquaculture Magazine*, 30-34.
- Rhodes M, Yu D, Zhou Y, Roy LA, Hanson TR, Davis DA. 2014. Concentrato de proteína de maíz: Una fuente económica de reemplazo de la harina de pescado en dietas para camarón. *Aqua Cultura*. 102:32-35.
- Rhodes, M., D. Yu, Y. Zhou, L. A. Roy, T. R. Hanson, and D. A. Davis. 2014. Corn Protein Concentrate: A cost-effective replacement for fish meal in shrimp diets. *Aquafeed: Advances in Processing & Formulation*. 6(1) 3-9.
- Yu, D., X. Fang, Y. Zhou, M. Rhodes, D.A. Davis. 2013. Use of Corn Protein Products in Practical Diets for the Pacific White Shrimp. XII International Symposium on Aquaculture Nutrition, Tabasco, Mexico.
- Rhodes, M.A., T. Hanson, S. Alavi and D.A. Davis. 2013 High-soy, Fishmeal-free diets support Florida Pompano growth. *Global Aquaculture Advocate*. Sept/Oct.:96-99.
- Rhodes, M.A., P. Paz, D.A. Davis and J. Stockel. 2011. An inexpensive recirculation system for growing bait shrimp. *Hatchery International* Nov/Dec 30-31.
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PUBLISHED ABSTRACTS, ORAL PRESENTATIONS & POSTERS

(* =Invited Paper; presenting author is in bold)

- “The Effects of Different Soybean Protein Sources on Growth Performance, Feed Utilization Efficiency, Intestine Histology, and Gene Expression of Pacific White Shrimp (*Litopenaeus vannamei*).” **Davis, D. A.**, K. Q. Nguyen, A. N. Araujo, T. L. Corby, M. Rhodes, and T. J. Bruce. Latin American & Caribbean Aquaculture 2024 (LACQUA24, VIII CLCPN and XI CCA). Medellin, Columbia September 24-27, 2024.
- The Effects of Different Soybean Protein Sources on Growth Performance, Feed Utilization Efficiency, Intestine Histology, and Gene Expression of Pacific White Shrimp (*Litopenaeus vannamei*). **Davis, D. A.**, K. Q. Nguyen, A. N. Araujo, T. L. Corby, M. Rhodes, and T. J. Bruce. International Symposium on Fish Nutrition and Feeding, Puerto Vallarta, Mexico May 27-31, 2024.
- Comparison and efficacy of soy-based ingredients in practical diets for Florida pompano *Trachinotus carolinus*”. **Trenton Corby**, Trinh Ngo, Khanh Nguyen, Adela Araujo, Melanie Rhodes, Timothy J. Bruce, Martin Riche, and D. Allen Davis. Aquaculture America 2024, San Antonio, Texas, USA. February 18-21, 2024.
- “The effects of Low Dissolved Oxygen in Green water Systems of Pacific White Shrimp *Litopenaeus vannamei*.” **Cristhian San Andres**, Adela Araujo, Khan Nguyen, Trent Corby, Melanie Rhodes, Luke Roy, Julio Garcia and D. Allen Davis. Aquaculture America 2024, San Antonio, Texas, USA. February 18-21, 2024.
- “Effects of high protein distillers dried grains with yeast as primary protein source on growth performance, feed utilization efficiency, haemolymph parameters, and physiological gene expression of Pacific white shrimp *Litopenaeus vannamei*.” **Khanh Q. Nguyen**, Cristhian S. Andres, Adela N. Araujo, Trenton L. Corby, Melanie Rhodes, S. Tilton, Timothy J. Bruce, D. Allen Davis. Aquaculture America 2024, San Antonio, Texas, USA. February 18-21, 2024.
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- “The relation between automatic aeration rate and expected dissolved oxygen on Pacific white shrimp *Litopenaeus vannamei* production semi-intensive pond conditions.” **Araujo, Adela N.**, San Andres, Christian F., Nguyen, Khanh Q., Corby, Trenton L., Rhodes, Melanie A., Garcia, Julio, Roy, Luke A., and Davis, D. Allen. Aquaculture America 2024, San Antonio, Texas, USA. February 18-21, 2024.
- “The effects of different soybean protein sources on growth performance, feed utilization efficiency, intestine histology, and gene expression of pacific white shrimp (*Litopenaeus vannamei*).” **D. Allen Davis**, Khanh Q. Nguyen, Adela N. Araujo, Trenton L. Corby, Leila

- M. Strebel, Melanie Rhodes, Timothy J. Bruce. World Aquaculture 2023. Darwin, Northern Territory, Australia. May 29-June1, 2023.
- “Passive acoustic monitoring as a tool to assess feed response and growth of shrimp in ponds and research systems.” **D Allen Davis**, Melanie Rhodes, Silvio Peixoto, Roberta Soares. World Aquaculture 2023. Darwin, Northern Territory, Australia. May 29-June1, 2023.
- *“Shrimp production and nutrient density of the diet” **D Allen Davis**, L. Strebel, A. Araujo, S. Bajracharya and M. Rhodes. LACAQUA 2023, Panama City, Panama, April 17-20, 2023.
- “On demand feeding and the response of pacific white shrimp (*Litopenaeus vannamei*) to varying dietary protein levels in semi-intensive pond production.” Leila M. Strebel, Khanh Q. Nguyen, Adela N. Araujo, Trenton L. Corby, **Melanie Rhodes**, D. Allen Davis. Aquaculture America 2023. New Orleans, LA. February 24-26, 2023.
- “Effect of different levels of crude protein at different feeding rates on Pacific white shrimp (*Litopenaus vannamei*).” **Adela N. Araujo**, Khanh Q. Nguyen, Leila M. Strebel, Trenton L. Corby, Melanie Rhodes, D. Allen Davis. Aquaculture America 2023. New Orleans, LA. February 24-26, 2023.
- Effects of different soybean protein sources on growth performance, feed utilization efficiency, intestinal histology, and physiological gene expression of pacific white shrimp (*Litopenaeus vannamei*).” **Khanh Q. Nguyen**, Adela N. Araujo, Trenton L. Corby, Leila M. Strebel, Melanie A. Rhodes, Timothy J. Bruce, D. Allen Davis. Aquaculture America 2023. New Orleans, LA. February 24-26, 2023.
- *“Shrimp production and nutrient density of the diet.” **D Allen Davis**, Leila Strebel, Adela Araujo, Shrijan Bajracharya and Melanie Rhodes. Aqua Expo 2022. Guayaquil, Ecuador October 17-20, 2022.
- *“Feed effectors in soy optimized diets: passive acoustics from the laboratory to the pond.” Samuel Walsh, Leila Strebel, Khanh Nguyen, Melanie Rhodes, Silvio Peixoto, and **D Allen Davis**. World Aquaculture 2021. Merida Mexico. May 24-27, 2022.
- “Utilizing feed effectors and passive acoustic monitoring for semi-intensive pacific white shrimp *Litopenaeus vannamei* production.” **Samuel Walsh**, Khanh Nguyen, Leila Strebel, Melanie Rhodes, D Allen Davis. Aquaculture America 2022. San Diego, California February 29-March 4, 2022.
- *“Passive Acoustic Monitoring: Application Results from the Pond to the Laboratory.” **D Allen Davis**, S. Walsh, L. Strebel, M. Rhodes, S. Peixoto, R. Soares. 7th International Scientific and Technological Meeting on Shrimp Farming. February 21-25, 2022. Obregon Mexico.
- “Use of metabolically modified canola oil as a replacement for fish oil in practical diets of Pacific white shrimp *Litopenaeus vannamei*.” **Alexis Weldon**, D.A. Davis, M. Rhodes, J. Reis, W. Stites, and S. Walsh. Aquaculture America 2021, San Antonio, Texas, USA. August 11-14, 2021.
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- *“Passive acoustic monitoring as a tool to assess feed response and growth of shrimp in ponds and research system.” **Davis, D. A.**, J. Reis, M Rhodes, S. Peixoto, R. Soares. Aqua Expo 2020: Guayaquil, Ecuador. November 24-26, 2020.
- *“Passive Acoustic Monitoring as a Tool to Assess Feed Response and Growth of Shrimp in Ponds and Research Systems” **Davis, D. A.**, João Reis, Melanie Rhodes, Silvio Peixoto, Roberta Soares. Aqua Expo 2020, Guayaquil, Ecuador November 24-26, 2020.
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- “Comparing different feeding protocols for improvement of shrimp (*Litopenaeus vannamei*) production in semi-intensive recirculation systems.” **Reis, J.**, A. Weldon, C. Stites, P. Ito, M. Rhodes, and D. A. Davis. Aquaculture America 2020. Honolulu, HI. February 9-12, 2020.
- “Automatic feeders schedule as a tool for improvement of shrimp (*Litopenaeus vannamei*) production systems in ponds.” **Reis, J.**, A. Weldon, C. Stites, P. Ito, M. Rhodes, and D. A. Davis. Aquaculture America 2020. Honolulu, HI. February 9-12, 2020.
- “Improving Automatic Feeding Protocols in Semi-Intensive Pond Culture of Pacific White Shrimp (*Litopenaeus vannamei*)” **João Reis**, Melanie Rhodes, and D. Allen Davis. Aquaculture Europe 2019, Berlin, Germany. October 7-10, 2019
- *“Improving Feed Management by Utilizing Automatic Feeding Systems in the Pond Production of Shrimp, *Litopenaeus vannamei*. **Melanie A. Rhodes** and D. A. Davis. Ecuadorian Aquaculture Conference. September 9-12, 2019. Guayaquil Ecuador.
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- “Sustainable feeds and improved feed management for the continued success of shrimp production” **M. Rhodes** and D.A. Davis LACQUA 2018, Bogota, Colombia October 23-26, 2018.
- *“Use of Automated Feeding Systems for the Production of Pacific White Shrimp *Litopenaeus vannamei*: A Research Perspective.” **Davis, D. A.***, C. Ullman, M. Rhodes, R. Novriadi, and A. Swanepoel Aquaculture America 2018, Las Vegas, Nevada. February 19-22, 2018.
- “Utilization of crystalline amino acids by pacific white shrimp *Litopenaeus vannamei*.” **Swanepoel, A.**., G.A. H. S. Chaturanga, X. Qiu, M. Rhodes, R. Novriadi, J. Reis, C. Ullman, and D. A. Davis. Aquaculture America 2018, Las Vegas, Nevada. February 19-22, 2018.
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- "Supplementing broodstock diets for Florida pompano (*Trachinotus carolinus*) with taurine to improve egg, larval and juvenile quality". **Thomas J Derbes II**, Melanie Rhodes, Guillaume Salze, Nicole Rhody, Matthew Resley, Kevan Main, Josh Neese, Marie Head and D. Allen Davis, Bays and Bayous Symposium 2016, Biloxi, MS, Nov 30-Dec. 1, 2016.
- "Improving High Soy Feed Formulations for Florida Pompano *Trachinotus carolinus* Through Phytase Supplementation. **Roe, C.**, M. Rhodes, D. A. Davis, T. P. T. H. Van, T. Hanson and G. Salze. Aquaculture America 2016. Las Vegas, Nevada, USA. February 22-26, 2016.
- "Improving Soy Based Feed Formulations for the Florida Pompano *Trachinotus carolinus* Using Novel Soy Protein Concentrate. **Roe, C.**, M. Rhodes, D. A. Davis, T. P. T. H. Van, T. Hanson and G. Salze. Aquaculture America 2016. Las Vegas, Nevada, USA. February 22-26, 2016.

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- “Response of Three Marine Species to Taurine Supplemented Diets”. **D. Allen Davis**, Guillaume P. Salze, Melanie Rhodes, Dave Jirsa, and Mark Drawbridge. World Aquaculture. Adelaide, June 7 - 11, 2014, South Australia.
- “Update on nutrition research with Florida pompano at Claude Peteet Mariculture Center. Melanie A. Rhodes, Rebecca Cook, Guillaume Salze, **D. Allen Davis** and Terry Hanson. Alabama Fisheries Association, Inc Annual Meeting. Lakepoint State Park, Feb 19-21, 2014.
- *“Taurine Research Update” **D. A. Davis**, G. Salze, E. Spangler, P. Cobine, M. Rhodes, 10th Annual Aquaculture Industry Coalition Meeting, Washington State Convention Center. Seattle, Washington. February 11, 2014.
- “Response of Florida pompano to increasing numbers of feedings.” **M. A. Rhodes**, R. Cook, D. Yu, K. Oliveira, D. A. Davis and T. Hanson. Aquaculture America 2014, Seattle Washington USA, February 9-12, 2014.
- “Investigation of biomarkers of taurine deficiency in Florida pompano *Trachinotus carolinus*.” **G. Salze**, E. Spangler, P. Cobine, M. Rhodes, D. A. Davis. Aquaculture America 2014, Seattle Washington USA, February 9-12, 2014.
- “Estimation of the quantitative requirement for dietary taurine in Florida pompano *Trachinotus carolinus* juveniles.” **G. P. Salze**, M. Rhodes, D. A. Davis. Aquaculture America 2014, Seattle Washington USA, February 9-12, 2014.
- “Evaluating taurine toxicity in Florida pompano *Trachinotus carolinus* and white seabass *Atractoscion nobilis*”. **G. P. Salze**, M. Rhodes, D. A. Davis, D. Jirsa, M. Drawbridge. Aquaculture America 2014, Seattle Washington USA, February 9-12, 2014.

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- “Benefits of Using Soy Protein Concentrate in Feed Formulations Supplemented with Taurine for Florida Pompano (*Trachinotus carolinus*)”. **M. Rhodes**, R. Cook, Y. Zhou, D. A. Davis, J. Chappell and T. Hanson. Aquaculture 2013: Striking a Chord for Sustainable Aquaculture. February 21-25 2013, Nashville, TN USA.
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- “Growth Performance of Florida pompano *Trachinotus carolinus* Fed Practical Diets with Increasing Levels of Cotton Seed Meal”. **R. Cook**, Y. Zhou, D. A. Davis, and M. A. Rhodes. Aquaculture 2013: Striking a Chord for Sustainable Aquaculture. February 21-25 2013, Nashville, TN USA.
- "Response of juvenile Pacific white shrimp, *Litopenaeus vannamei* to two sources of copper supplements." with **Yan-Gen Zhou**, J. M. Achupallas and M. Rhodes. Aquaculture America 2012. Feb 28 - March 2, 2012. Las Vegas, NV.
- "Use of new soybean varieties in practical diets for the Pacific white shrimp, *Litopenaeus vannamei*." with **Yan-Gen Zhou**, J. M. Achupallas and M. Rhodes. Aquaculture America 2012. Feb 28 - March 2, 2012. Las Vegas, NV.
- "Replacement of fish meal with fermented biomass in the diet of juvenile Florida pompano, *Trachinotus carolinus*." with **Yan-Gen Zhou**, J. M. Achupallas and M. Rhodes. Aquaculture America 2012. Feb 28 - March 2, 2012. Las Vegas, NV.
- "Evaluation of ethanol yeast as an alternative protein source in production diets for the Pacific white shrimp, *Litopenaeus vannamei*." with **Julio. M. Achupallas**, Yan-Gen Zhou, and M. Rhodes. Aquaculture America 2012. Feb 28 - March 2, 2012. Las Vegas, NV.
- "Growth response of Florida pompano, *Trachinotus carolinus* fed taurine supplemented high soy diets compared to fish meal based diets." with **Melanie Rhodes**, Yan-Gen Zhou, and J. Chappell and T. Hanson. Aquaculture America 2012. Feb 28 - March 2, 2012. Las Vegas, NV.
- “Conditional Requirement for Taurine in Fishmeal-Free Diets for Florida Pompano (*Trachinotus Carolinus L.*). with **Rossi, W.**, and M. Rhodes. Aquaculture America 2011. March 1-3, 2011. New Orleans, LA.
- “A Low Cost Closed Recirculating System for the Production of Live Bait Shrimp”. with **Rhodes, M. A.** , F. S. D. Silva, and P. Paz. Aquaculture America 2011. March 1-3, 2011. New Orleans, LA.
- “Current Nutrition Research on Florida Pompano, *Trachinotus carolinus*”. with, M. Rhodes, W. Rossi Jr, and **F. S. D. Silva**. Alabama Fisheries Association, Inc. Annual Meeting February 2-4, 2011. Mobile, Alabama.

- “Summary of the 2010 Shrimp Research Conducted at Claude Peteet Mariculture Center”. with , M. Rhodes, F. S. D. Silva., and W. Rossi Jr Alabama Fisheries Association, Inc. Annual Meeting February 2-4, 2011. Mobile, Alabama.
- “Evaluation of the replacement of fish meal by poultry by product meal in practical diets for Florida pompano *Trachinotus carolinus*. with **W. Rossi Jr.** and M. Rhodes. Aquaculture America 2010, March 1-5, 2010. San Diego California, USA.
- “Evaluation of the replacement of fish meal by meat and bone meal in practical diets for Florida pompano *Trachinotus carolinus*. with **W. Rossi Jr.** and M. Rhodes. Aquaculture America 2010, March 1-5, 2010. San Diego California, USA.
- “Update on nutrition research with Florida pompano (*Trachinotus carolinus*). with **Melanie Rhodes** and Herbert Quintero. 25th Annual Meeting Alabama Fisheries Association Inc. February 23-25, 2009. Auburn, Al USA.

WORKSHOPS, OUTREACH & TECHNICAL SUPPORT

- Roy LA**, Araujo AN, Bajracharya S, Rhodes M, Amacker CA, Smith M, Kelly AM, García JC, Beck BH, Davis, DA. 2023. Integrated extension and research programs to support shrimp producers in the United States. Biomar Global Shrimp Exchange 2023. Auburn University, Auburn, Alabama. November 13 – 16.
- Utilizing Feed Effectors and Passive Acoustic Monitoring for Semi-Intensive Pacific White Shrimp (*Litopenaeus vannamei*) Production.” Samuel Walsh, Khanh Nguyen, Leila Strebel, Melanie Rhodes, D Allen Davis. Annual Meeting of the Alabama Inland Shrimp Producers Association. Alabama Fish Farming Center, Greensboro, Alabama. February 16. (invited; 13 attendees)
- “Shrimp Nutrition and feed management”. **Davis, D.A.** Reis, J., Rhodes, M., Peixoto, S., Soares, R. and Davis, D. A. 2021. Latin American & Caribbean Aquaculture 2021. March 23 to 25, 2021. Virtual meeting.
- “Passive acoustic monitoring as a tool to assess feed response and growth of shrimp in ponds and research systems”. **Davis, D. A.**, J. Reis, M. Rhodes, S. Peixoto and R. Soares. March 16, 2021. Technology Transfer Virtual seminar. Hosted by Cargill (60 participants)
- “Passive acoustic feeders as a tool to assess feed response and growth in shrimp pond production”. **Reis, J.**, Weldon, A., Walsh, S., Stites, W., Rhodes, M., Davis, D. A. 2021. Annual Meeting of the Alabama Inland Shrimp Producers Association. Alabama Fish Farming Center, Greensboro, Alabama. March 2, 2021 (invited).
- “Passive acoustic monitoring as a tool to assess feed response and growth of shrimp in ponds and research systems”. **Davis, D. A.**, J. Reis, M. Rhodes, S. Peixoto and R. Soares. 6th Scientific and Technological Meeting of Shrimp organized and hosted by Panorama Acuicola. January 26th, 2021. Virtual seminar.
- [2do día 6ta Reunion científica y tecnológica sobre el cultivo de camarón. https://www.youtube.com/watch?v=dgP826tCIF0](https://www.youtube.com/watch?v=dgP826tCIF0)
- “Does feed manufacturing type really matter?”. Silvio Peixoto and Melanie Rhodes 37th Fish Feed and Nutrition Workshop, Auburn University, Auburn, Al September 18-20, 2019.
- “Acoustics and Feed Management”. Silvio Peixoto and Melanie Rhodes 37th Fish Feed and Nutrition Workshop, Auburn University, Auburn, Al September 18-20, 2019.